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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,361	03/09/2004	Niro Nakamichi	09650/0200850-US0	4351

7278 7590 10/14/2008

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EXAMINER	
OLANIRAN, FATIMAT O	
ART UNIT	PAPER NUMBER
2614	
MAIL DATE	DELIVERY MODE
10/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/797,361	NAKAMICHI ET AL.	
	Examiner	Art Unit	
	FATIMAT O. OLANIRAN	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) *6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6/26/2008 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). However, applicant briefly addresses the combination of Yoshida et al (5854847) in view of Thigpen (20040109575), applicant argues

"…Thigpen discloses directional acoustic transducers as speakers. He does not disclose cone type speakers. Actually, Thigpen teaches that sound from a conventional cone type speaker which is reflected will sometimes result in a comb filtered frequency response curve to cause the cancellation of some frequencies. *See* paragraph [0027]. Thigpen states in the last sentence of paragraph [0027] that "With the present invention, most of the sound energy arrives from the reflective surface and at the same time, thus reducing comb filtering." Thus, Thigpen teaches that sound from a cone type speaker which is reflected from glass will result poor sound quality because some of the frequencies will be cancelled. Referring now to paragraph [0033], Thigpen clearly states that "A conventional cone type speaker ...will not project a convincing acoustic image onto the glass because of the wide dispersion associated therewith". Clearly, Thigpen teaches that poor quality sound will result when sound from a cone type speaker is

reflected from glass. Therefore, Thigpen teaches away from doing what Applicants are doing and claim as their invention that of positioning a cone type speaker to reflect sound from the front glass of the automobile…"

Examiner respectfully disagrees with applicant's conclusion that, "…Thigpen teaches away from doing what Applicants are doing…" Thigpen simply points out a problem that exists with cone type speaker, this in fact validates Examiner's non-obviousness claim because Thigpen is admitting in paragraph 27 that applicant's cone speaker with reflection has been done and is part of the knowledge of one of ordinary skill. Thigpen simply points a distortion problem that sometimes occurs. This does not teach away from Examiner's combination.

Examiner has addressed in the previous Office Action applicant's remarks with regards to the horizontal and vertical axis claimed.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Thigpen (20040109575).

Claim 1 Yoshida discloses, a speaker apparatus for mounting in an automobile (col. 2 line 49), comprising, a center cone type speaker located in the center of the width direction of the automobile (Fig. 2 and col. 3 line 40-44)

an L channel cone type speaker unit placed forward of a driver seat and a passenger seat of the automobile (col. 2 line 50-51) and immediately at the left of the center speaker (Fig. 2 and col. 3 line 40-44) having:

a horizontal vibration axis is in a direction pivoted counterclockwise from a forward direction of motion of said automobile (Fig. 2 Examiner's horizontal axis is across the vehicle from side-to-side), and

an R channel cone type speaker unit placed forward of the driver seat and the passenger seat of the automobile (col. 2 line 50-51) immediately at the right of the center speaker (Fig. 2 and col. 3 line 40-44) having;

a horizontal vibration axis in a direction pivoted clockwise from the forward direction of motion of said automobile (Fig. 2, Examiner's horizontal axis is across the vehicle from side-to-side) .

Yoshida does not disclose a vertical vibration axis at an incline of a prescribed angle in the direction of motion of said automobile to intersect with and direct sound from a front glass of said automobile.

Thigpen discloses disclose a vertical vibration axis at an incline of a prescribed angle in the direction of motion of said automobile to intersect with and direct sound from a front glass of said automobile (Fig. 1, Fig. 2, Fig 9 and paragraph 26, line 1-6, Examiner's vertical axis is the axis that intersects the windshield). Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the left and right speakers of Yoshida with the placement of Thigpen in order to improve stereo imaging for each passenger as taught by Thigpen (paragraph 26, line 12-14).

3. Claims 2-3 and 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Thigpen (20040109575) in further view of Yajima et al (6519344).

Claim 2 analyzed with respect to claim 1, Yoshida discloses a center speaker unit disposed with said L channel speaker and R channel speaker (col. 2 line 54-55). Yoshida in view of Thigpen do not disclose and which outputs a -L - R signal in which a -L signal, which is a reverse phase signal of, said L channel signal is added to a -R signal which is a reverse phase signal of said R channel signal.

Yajima discloses and which outputs a -L - R signal in which a -L signal which is a reverse phase signal of said L channel signal is added to a -R signal which is a reverse phase signal of said R channel signal (Figure 1, col. 7 line 34-56).
Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify the speaker system of Yoshida in view of Thigpen with the audio processing of Yajima in order to provide an improved sound effect as taught by Yajima (col.1 line 8-9).

Claim 3 analyzed with respect to claim 2 and claim 1, Yoshida in view of Thigpen disclose said center speaker unit (Yoshida; col. 2 line 54-55) is placed so that a line extending from a vertical vibration axis thereof intersects with a front glass of said automobile (Thigpen; Fig 9 and paragraph 26, line 1-6).

Claim 5 analyzed with respect to claim 3, claim 2 and claim 1, Yoshida in view of Thigpen disclose wherein said center channel vertical vibration axis is inclined (Thigpen Fig 9 and paragraph 26, line 1-6, Examiner's vertical axis is the axis that intersects the windshield).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Thigpen (20040109575) in further view of Yajima et al (6519344) in further view of Goldfarb (5764777).

Claim 4 analyzed with respect to claim 2 and claim 1, Yoshida in view of Thigpen and Yajima does not disclose a subwoofer disposed separate from said center speaker unit, said L channel speaker and said R channel speaker, which outputs a L+R signal. Goldfarb discloses a subwoofer disposed separate from said center speaker unit (col. 9 line 67, col. 10 line 1-2), said L channel speaker and said R channel speaker, which outputs a L+R signal (col. 10 line 7-13). Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify the speaker system of Yoshida in view of Thigpen and Yajima with the subwoofer of Goldberg in order to have an amplifier dedicated to the output of bass audio frequencies.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Yajima et al (6519344) in further view of Thigpen (20040109575).

Claim 7, Yoshida discloses an L channel cone type speaker unit which produces an L channel signal (Fig. 1, col. 2 line 53-54) an R channel cone type speaker unit which produces an R channel signal (Fig. 1, col. 2 line 53-54); a center cone type speaker unit

(Fig. 1, col. 2 line 54-55), which is placed between said L channel speaker unit and said R channel speaker unit (Fig. 2)

a horizontal vibration axis of said L channel speaker unit is pivoted counterclockwise from a forward direction of motion of said automobile (Yoshida; Fig. 2 Examiner's horizontal axis is across the vehicle from side-to-side)

a horizontal vibration axis of said R channel speaker unit is pivoted clockwise from the forward direction of motion of said automobile (Yoshida; Fig. 2 Examiner's horizontal axis is across the vehicle from side-to-side);

and wherein said L channel speaker unit, said R channel speaker unit, and said center speaker unit are placed in close proximity with each other forward of a driver seat and a passenger seat of an automobile (Fig. 2).

Yoshida does not disclose and which produces a -L channel signal and -R channel signal, wherein the –L channel signal partially cancels the sound to the right ear of a listener on the left side of the speaker apparatus, and wherein the –R channel signal partially cancels the sound to the left ear of a listener on the right side of the speaker apparatus. the a vertical vibration axis of said L channel speaker unit in the direction of motion of said automobile and vertical vibration axis of said R channel speaker unit in the direction of motion of said automobile.

Yajima discloses and which produces a -L channel signal and -R channel signal, wherein the –L channel signal partially cancels the sound to the right ear of a listener on the left side of the speaker apparatus, and wherein the –R channel signal partially cancels the sound to the left ear of a listener on the right side of the speaker apparatus.

(Figure 1, col. 7 line 34-56 and col. 7 line 57-65).

Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify the speaker system of Yoshida with the audio processing of Yajima in order to provide an improved sound effect as taught by Yajima (col.1 line 8-9).

Yoshida in view of Yajima do not disclose the a vertical vibration axis of said L channel speaker unit in the direction of motion of said automobile and vertical vibration axis of said R channel speaker unit in the direction of motion of said automobile.

Thigpen discloses the a vertical vibration axis of said L channel speaker unit in the direction of motion of said automobile and vertical vibration axis of said R channel speaker unit in the direction of motion of said automobile (Fig 9 and paragraph 26, line 1-6).

Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify the speaker in a car of Yoshida in view of Yajima with the incline of Thigpen in order in order to improve stereo imaging for each passenger as taught by Thigpen (paragraph 26, line 12-14).

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FATIMAT O. OLANIRAN whose telephone number is (571)270-3437. The examiner can normally be reached on M-F 10:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FO

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615